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Title:	Low Enriched Fuel Fabrication Facility (LEFFF) at LANL
Author(s):	Jackson, Jay Matthew Cerreta, Ellen Kathleen
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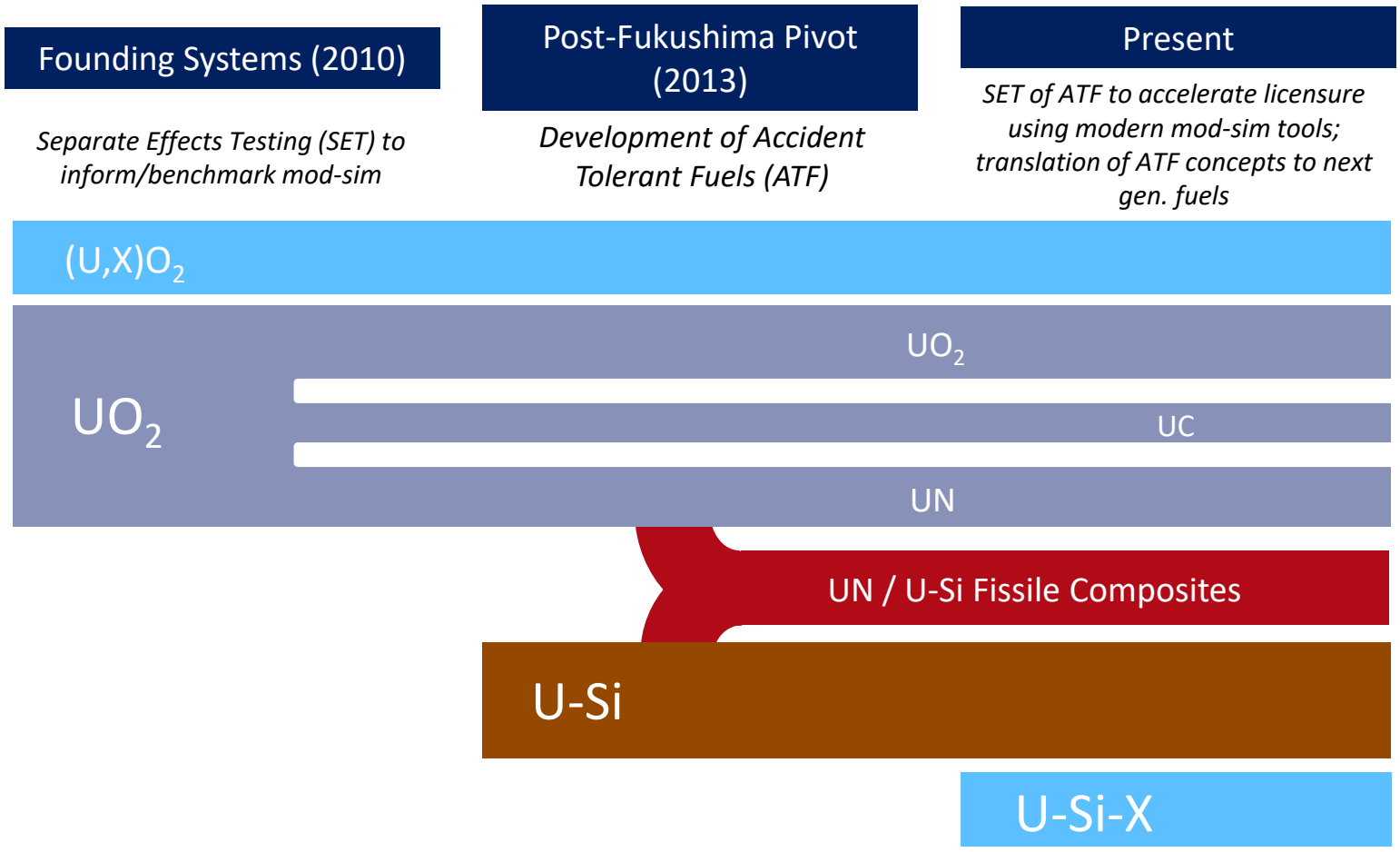
Low Enriched Fuel Fabrication Facility (LEFFF) at LANL

LANL involvement in the Development of Fuel Systems from 2010-Present has Adapted to the Changing Landscape



Currently, We have the ability to develop small amounts of novel fuels

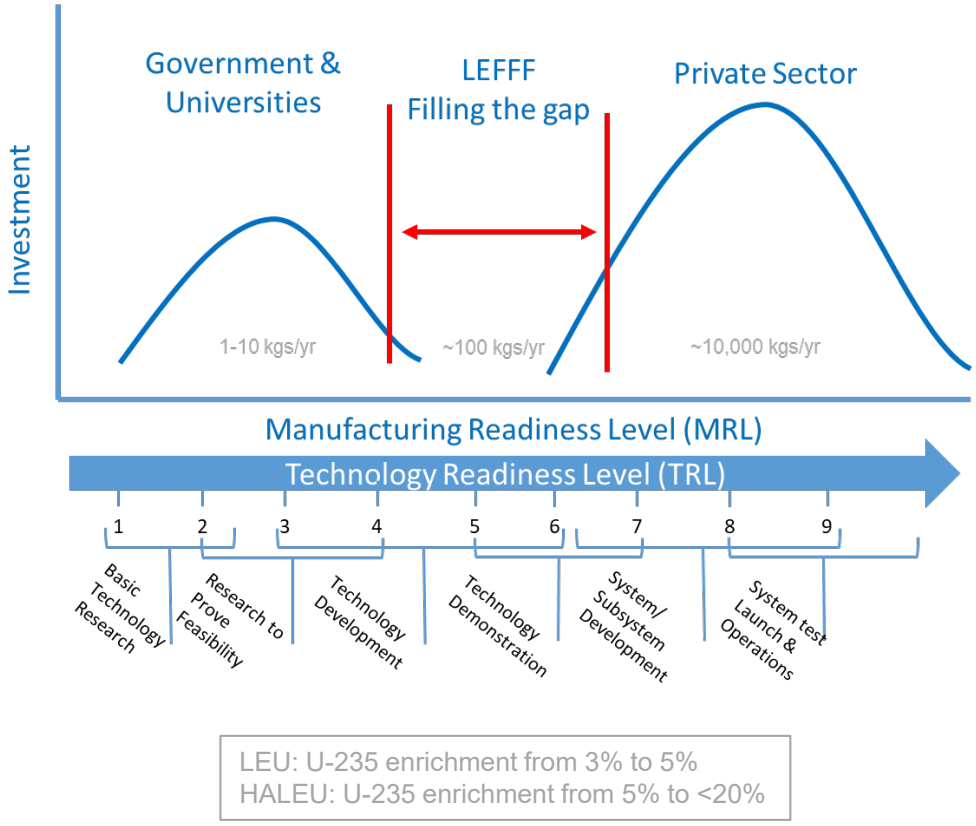
Authorization Basis of Fuels Research in MST @ LANL

- **Depleted Uranium (dU)**
  - Primary isotope for materials research and development
  - 50 kg annual throughput
- **Low-enriched Uranium (LEU)**
  - FRL is a primary fabrication facility for AFC
  - ≤20% U-235 for TREAT/ATR/HFIR irradiations of AFC compositions
- **Highly-enriched Uranium (HEU)**
  - Future ATR irradiations may seek more sophisticated enrichment within rodlet
  - Maximum U-235 in facility (at present) is 300-400 g
- **Thorium-232**
  - Included in original authorization request
  - No DOE-NE Th work since FY12
- **Low dose neutron-irradiated materials**

One furnace run of ~5% U-235 U_3Si_2 pellets (~8 mm right cylinders) ≃ 10 g U-235

We are looking forward to our New Facility: Low Enriched Fuel Fabrication Facility (LEFFF)

- LANL has successfully supported and will continue to support fuels development at the TRL 1-3
- LEFFF's focus will expand LANL's operating window to support the maturation and demonstration of fuel systems, TRL 4-7
  - The gap between R&D scale and commercial scale
- **Opportunity:** Support customers TRL/MRL maturation of fuel systems that desire enrichments up to High Assay Low Enriched Uranium (HALEU) at quantities to demonstrate the technology (i.e. prototypes, lead test rods, lead test assemblies, etc.)
- Projected to have occupancy in April 2023



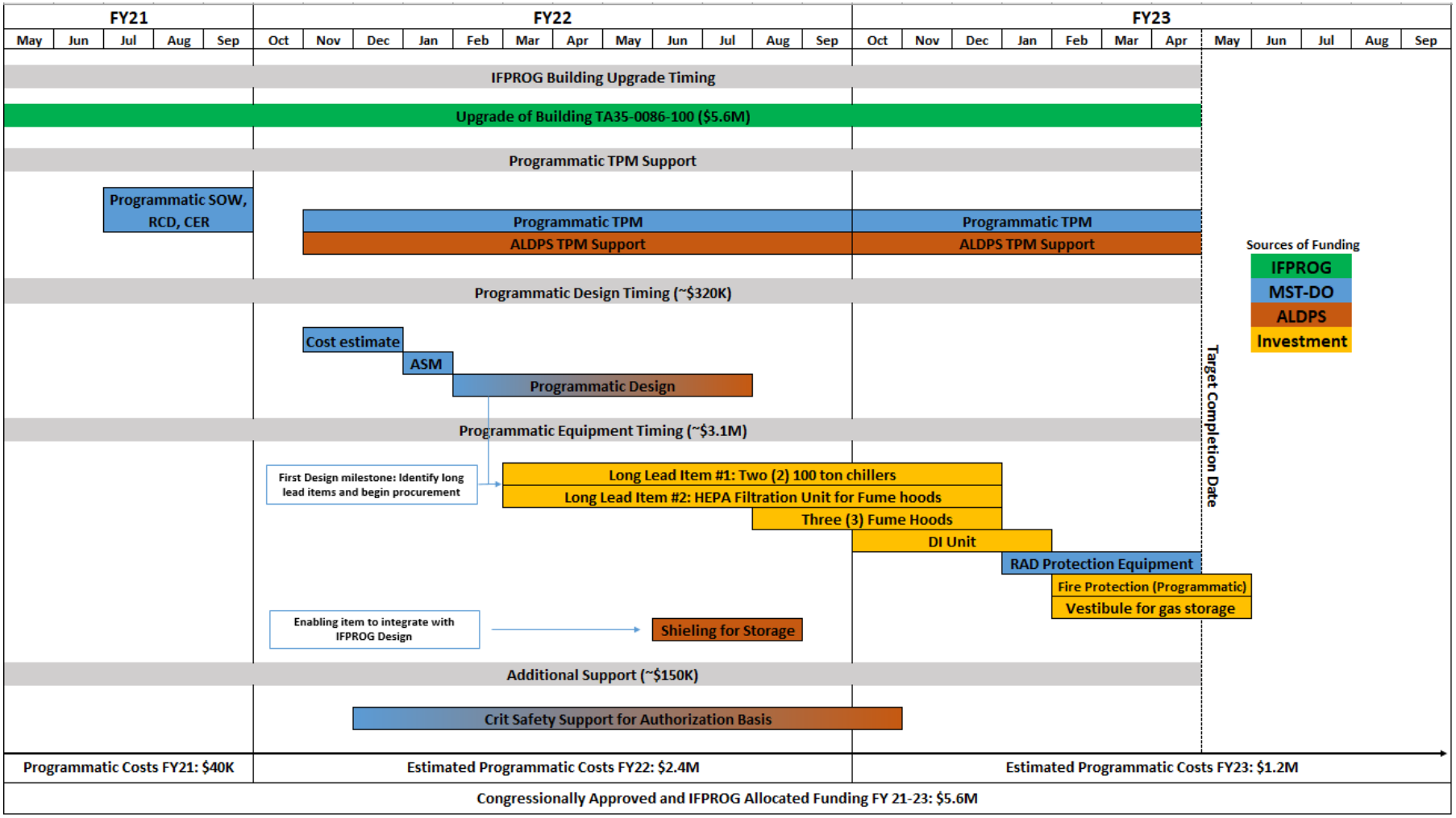
LEU: U-235 enrichment from 3% to 5%
HALEU: U-235 enrichment from 5% to <20%

LANL is filling a gap in the DOE complex to support enriched fuel needs

LEFFF Mission Statement

"Provide an envelope with the utilities and authorization basis to fabricate HALEU fuels at the scale of hundreds of kgs/year"

Timeline/Cost for Additional Programmatic Needs



The cost and dates are estimates for the equipment/utilities needs, the design phase will solidify these numbers

Contacts

Ellen Cerreta
MST Division Leader
ecerreta@lanl.gov
505-665-2576

Matt Jackson
MST Deputy Division Leader
jayjacks@lanl.gov
505-667-6178